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THE NEED FOR METAL SAVING
AND THE ADVANCEMENT OF TECHNIQUES

In 1949, the output of agricultural machinery was several times that of 1948. The output of grain combines had doubled and production of tractor plows, tractor seeders, and complex threshers had increased 1.5 times.

In connection with the growing production tempo, economy in the expenditure of raw materials -- in particular, rolled metal -- assumes a role of great importance. In the second half of 1949, the Ministry of Agricultural-Machine Building established definite norms for metal consumption, reducing them in most cases. All enterprises, design bureaus, and research institutes must wage a ceaseless struggle at every step for a higher coefficient of metal utilization.

Metals arriving at a plant must be carefully weighed and stored. It has been noted recently that metal deliveries from metallurgical plants arrive with maximum marginal allowances. This practice must be halted through regular spot checks of the actual weight of sheet, strip, and profile metal. The maintenance of records of available metal will prevent the repetition of a situation revealed by a recent check, when many plants showed either surpluses or deficits. The lack of such a bookkeeping system in the Rostsel'mash and Krasnyy Aksay Plants made it impossible for them to account for their overconsumption of metal. It is also essential that metal waste material be utilized. Plants must produce dies and other devices which will mechanize the production of parts from waste metal.

In 1949, not all of the design bureaus carried out the ministry's instructions to reconsider the types of rolled metal to be used for new models or to re-examine their designs with a view to reducing the weight of the machines. While the coefficient of utilization is satisfactory in the case of the Stalinets-6 combine, the five-section P-35-5 plow, the tractor cultivator, and the OS-3 grain cleaner, it is low with respect to other machines. In 1949, it was only 67 percent for the self-propelled combine, 67 percent for the tractor-drawn K-6 mower, and 64 percent for the garden and orchard plow.

Among measures for conserving metal, the following must be applied: full utilization of metal in the production of individual parts, which, as far as

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possible, should be made by stamping instead of free-hand forging and machining; increased substitution of rolled metal with cast steel and malleable and modified cast iron; more extensive use of low-alloy and drawn calibrated steels. Pipes should be made in special profiles and have high wear resistance. Wheel rims should be profiled. Great savings can also be effected by reduction of rejects and the proper planning of supplies. Very frequently, overconsumption is due to the substitution of one metal for another.

In connection with the general problem of advancing production techniques, there are a number of specific measures that must be effected in 1950. The work of the iron and steel-casting shops plays a significant role in machine building. In most of the shops, the basic operations (tamping, forging, and pouring) have been mechanized. At the same time, the trimming and cutting of steel castings are far from satisfactory; for a number of basic machines, the labor consumption involved in these operations alone constitutes 30-35 percent of the total labor expense. These operations must be mechanized.

The transport of castings must be mechanized and their flow in the cutting sections must be organized. The positive results obtained in the Tula Combine Plant, with electric contact heating prior to bending and molding, must be generalized. This method, instead of heating in flame furnaces, has a great savings value and improves labor conditions.

The introduction of high-speed methods must be furthered. Along with the conversion of metal-cutting machine tools to high-speed production, the following must be organized: the tool economy, plate welding, and cutter grinding in accordance with new techniques, i.e., the anode-mechanical, electric contact, and electric spark methods. Electric spark hardening must also be used.

The personnel of the Technical Department of the Ministry of Agricultural-Machine Building must control and assist in setting up mechanized, continuous production lines in the following plants: Imeni October Revolution, with regard to the production of plowshares and plow dumps; Taganrog Combine Plant, in the production of hook chains; and Serp i Molot, in the manufacture of combine engines.

Moreover, greater attention must be given to the ultimate quality, durability, and external appearance of machines. The painting and drying operations must be mechanized and oilless paints must be utilized.

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